

## Fact Sheet 4

# Bloodsworth Island Range

## Water and Sediment Quality



### Have any environmental quality tests been performed at Bloodsworth Island Range?

Yes. In 1980 and 2001, the Navy conducted environmental tests of water, soil and sediment samples collected from Bloodsworth Island Range to assess the potential for contamination on and off the range from past military operations.

### What do these tests say about contamination at Bloodsworth Island Range from past military operations?

The overall results of all studies indicate little evidence of contamination from military operations at Bloodsworth Island Range.

#### 1980 Sampling and Analysis

In 1980, samples were taken from areas most likely to be contaminated, namely shell impact areas. The samples were analyzed for explosive compounds. Analyses revealed small traces of explosive compounds in soil samples and no traces of explosive compounds in water samples.

The Navy's conclusion that there was minimal contamination from operations was supported by data from the Environmental Protection Agency (EPA) Mid-Atlantic Integrated Assessment (MAIA). The MAIA reported sediment contaminant distribution across estuaries of the Mid-Atlantic Region (*Condition of the Mid-Atlantic Estuaries*, EPA, November 1998). The report categorized sediment contamination levels as sediments that pose no risk, minimal risk, or potential risk to aquatic life. The EPA MAIA reported that sediments in the waters surrounding the range posed no risk to aquatic life.



Taking a beach sample on the Bloodsworth Island Range, top.

A diver gets ready to take a sediment sample, middle.

Water samples being taken at the Bloodsworth Island Range.

Photos provided by CH2MHill.

#### 2001 Sampling Event

In 2001, a study was conducted to evaluate whether concentrations found at Bloodsworth were indicative of historic releases on the bombardment and bombing range and to evaluate whether concentrations posed any unacceptable risks to human health and the environment.

Water, soil and sediment samples were taken at Bloodsworth, nearby islands and the surrounding waters. An outside laboratory analyzed samples for metal and explosive chemical concentrations.

Preliminary results indicate that concentrations of two metals may pose a minimal potential risk to aquatic fauna. However, concentrations do not pose any unacceptable risks to human health.

The final results are presently being reviewed, verified and interpreted.

### Does the Navy or the EPA plan to clean up the site?

Historically, ordnance clearance operations have been performed periodically to remove scrap metal and unexploded ordnance (UXO) due to the potential safety hazard.

At this time, there is no requirement to clean up any potential contaminants at the site, since the range is still active. Under EPA's Military Munitions Rule, active military ranges are not subject to the Resource Conservation and Recovery Act (RCRA). RCRA is the federal regulation that outlines classification, treatment, storage and disposal of hazardous wastes.

UXO, if present, can create a safety hazard to someone trespassing on Bloodsworth

Island Range. However, clearing the UXO would require excavating marsh soils, which is likely to create more environmental damage than leaving the ordnance in place.

### **Is it possible that the groundwater or drinking water could be contaminated?**

It is unlikely that groundwater or drinking water wells could be contaminated since the nearest drinking water source is over four miles from the range.

In addition, studies of groundwater in the vicinity of Bloodsworth Island indicate groundwater flowing from the northeast of the Delaware Peninsula (around Salisbury and the Nanticoke River) towards the southwest (the Chesapeake Bay at Bloodsworth Island). In other words, nearby drinking water wells would be drawing on groundwater that is flowing from the northeast, not from the direction of Bloodsworth Island.



**A bird's-eye view of the Bloodsworth Island Range.** Photo provided by NAS Patuxent River Photo Imaging Lab.

### **Are fish/oysters/crabs contaminated? Can I still eat them?**

There has been no indication of contamination of marine life from military operations at Bloodsworth Island. Navy sediment sampling results and data from the EPA MAIA (*Condition of the Mid-Atlantic Estuaries*, EPA, November 1998) support this statement.

#### 1998 EPA MAIA Report

In addition to studying sediment contamination levels in mid-Atlantic estuaries, the MAIA reported on the condition of the benthic community in waters across the Mid-Atlantic Region. Benthic organisms are a critical component of the estuarine food web, supporting many commercially important species of fish and shellfish. Benthic organisms inhabit the bottom sediments where contaminants tend to accumulate. Many remain in one spot on the bottom or move relatively short distances over their lifetime. Therefore, the condition of the benthic community often is a good indicator of the condition of the local estuarine environment.

EPA's MAIA reported that the condition of the benthic community in waters surrounding Bloodsworth Island Range was good. Given the reports from the EPA's MAIA and the results from the Navy's sediment samples, there is no evidence to suggest that fish, oysters, or crabs around

Bloodsworth Island Range have been contaminated. Therefore, fish, oysters and crabs around Bloodsworth Island Range should be as safe to eat as those caught at other locations in the Bay.

### **Could *Pfiesteria* growth be caused from ordnance remnants on Bloodsworth Island Range?**

Discovered in 1988 by researchers at North Carolina State University, *Pfiesteria piscicida* is a toxic, microscopic, free

swimming, single-celled organism that has been connected to fish lesions and fish kills in coastal waters from Delaware to North Carolina. Classified as a type of algae, most forms of *Pfiesteria* are non-toxic, but in the presence of fish, particularly schooling fish, a change is triggered in *Pfiesteria piscicida* by the fish secretions and excrement. This change causes harm to fish by allowing *Pfiesteria* to release a toxin in the water.

*Pfiesteria* is not an infectious agent like some bacteria, viruses, and fungi. Thus, fish are not killed by an infection of *Pfiesteria*, but rather by the toxins the *Pfiesteria* releases.

Factors known to promote the presence of toxic *Pfiesteria* include warm, brackish, poorly flushed waters and high levels of nutrients, such as nitrogen and phosphorus.

Excess nutrients are common pollutants in coastal waters. Chief sources of nutrient pollution in coastal areas are sewage treatment plants, septic tanks, fertilizer runoff from suburban landscapes and animal waste runoff from agricultural operations.

Operations at Bloodsworth Island Range, both historic and current, are not a source for nutrient pollution in the Chesapeake Bay.

### **Has Bloodsworth Island Range been used to test experimental ordnance?**

The Navy has very detailed guidelines and restrictions on the testing of experimental ordnance such as nuclear, biological or chemical ordnance.

Bloodsworth Island Range is unsuitable and unapproved for such testing. There is no indication that nuclear, biological or chemical testing ever occurred at Bloodsworth Island Range.